REMARKS

In response to the Office Action mailed on July 12, 2005, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks discussing patentability of rejected and newly added claims. Applicants respectfully request allowance.

Claims 1-23 were previously pending in the subject Application. Applicants have renumbered the claims in accordance with the Examiner's number scheme. Claims 24-36 are being added by way of this amendment. Thus, after entry of this Amendment, claims 1-36 will be pending. No new matter was added to the application when amending or adding these claims. Also, the submission of any amendments should not be interpreted as acquiescing to any of the rejections.

The following remarks address the rejections of claims 1-23 as set out in the present Office Action and patentability of newly added claims 24-36. Applicants respectfully request reconsideration.

Rejection of Claim 1-23 under 35 U.S.C. § 112

Applicants have addressed the Examiner's concern regarding use of the term "internetwork" by substituting the term with "network" instead.

Applicants have cancelled claims 6 and 15.

Based on the above modifications, Applicants respectfully request that the rejection under 35 U.S.C. § 112 be withdrawn.

Summary of an Embodiment of the Invention

Prior to discussion of the pending claims, Applicants would like to briefly discuss an illustrative embodiment of the present invention. One embodiment of

the present invention uses a new method called replica routing to automatically direct a client computer to a replica server based on the location of the client computer in a network. More particularly, a client computer sends a request over a network. A replica router intercepts the request rather than forwards the request to the originally intended recipient. The replica router "transparently" redirects the requesting client to a replica server that can perform well given the client's location in the network and its respective estimated performance.

Rejections of Claims under 35 U.S.C. § 102(e)

The Examiner has rejected claim 1 under 35 U.S.C. § 102(e) based on the teachings of Wallis, et al., (U.S. Patent 6,282,569). Applicants are appreciative of the Examiner's review of pending claim 1 and respectfully request further consideration of same in view of the following discussion pointing out why claim 1 is unique over the cited prior art.

As discussed in the Abstract and throughout the specification, Wallis discloses a name server that spreads a load from client servers to multiple different servers. The name server spreads the load based on test criteria. For example, at column 3, lines 18-25, Wallis recites criteria for determining how to balance a load of requests from multiple clients:

> Any manner of predetermined test criteria can be used in the data processing system of the invention, for example the amount of idle processor time, the number of processes running, the amount of free memory, the "load average", etc. However in preferred embodiments the predetermined test criteria are such that the decision logic identifies the server computer having the least number of client programs logged on to it. (emphasis added)

Additionally, Wallis recites at column 7, lines 22-50 a particular technique of determining which of multiple servers shall service a respective request:

> The ULL application consists of the following elements from FIG. 1: the decision logic 120 with child processes 130, 140, 150; the writing means 160; and the messaging means 170. As described earlier with reference to FIG. 1 the ULL application periodically (at a frequency which can varied (eg. tuned by a system administrator or dynamically adjusted)) polls the server computers in the cluster to determine how "busy" in some sense they are. The metric used may vary, depending on the type of work which is being handled by the cluster, but may for example include the number of login sessions, number of application instances running, number of idle cpu cycles since the last poll, etc. The metric can be altered to ensure that it is appropriate to a specific situation.
>
> Based on the results of this polling, and taking into account the situation where a server computer in the cluster is too busy to respond to the status request within a certain number of seconds, the ULL application decides which machine is currently the least heavily loaded. The ULL application then modifies the database file (named.data) to associate the generic cluster machine name with the Internet address of this least heavily loaded machine, and sends the special inter-process signal via the messaging means 170 which tells the nameserver application to re-read its database file. The nameserver application will then, in response to a name resolution request from a client program, resolve the generic server computer name into the Internet address of the most appropriate server computer in the cluster for the client program to connect to. (emphasis added)

Accordingly, the prior art teaches a method of load-balancing based on whether a respective server has the most free resources to service a request.

In contradistinction to this cited technique, the invention teaches away from the cited references because claim 1 recites a replica router configured to "calculate a performance metric value for each of at least two server replicas, the value specifying an estimated communication performance between the client computer and a server replica based upon the client computer's location in a

network; and direct the client computer to at least one server replica that is estimated to provide good performance based upon the client computer's location in the network based on the performance metric values of the server replicas as calculated by the replica router."

The claimed invention teaches away from the cited prior art because the replica router receiving the request keeps track of metrics indicating an estimated communication performance between the client computer and a replica server based on a location of the client computer in the network. There is no indication whatsoever in Wallis that the data processing system knows where the client resides in the network. Moreover, there is no indication in Wallis that the data processing system 10 or any other resource in Wallis generates performance metrics reflecting an ability of each of multiple replica servers to communicate with the client computer based on its location in the network. For example, Wallis focuses on a current processing load associated with a respective server and not a relative ability of the respective server to communicate with the client depending on the location of the client in the network. Thus, Applicants respectfully submit that the cited reference does not teach every claim limitation.

Applicants respectfully submit that the claimed invention provides utility not taught or suggested by Wallis. One purpose of the claimed invention is to redirect clients to respective replica servers depending on a location of the client in a network. For example, because location is taken into account, the replica router can redirect a client request to a server that is nearby. This can reduce network traffic and congestion. The cited reference does not address this issue because there is no indication that requests are redirected based on location. Instead, Wallis indicate that redirection to a server depends on whether a server is not heavily loaded serving other requests.

Based on the aforementioned remarks, Applicants respectfully submit that the invention as recited in claim 1 is neither anticipated nor obvious because it

includes a unique and useful configuration not taught or suggested by Wallis or any other reference of record. Thus, in view of the foregoing discussion, Applicants submit that claim 1 in its original form is patentably distinct and advantageous over the cited prior art, and the lack of novelty rejection should be withdrawn. Accordingly, allowance of claim 1 as well as corresponding dependent claims 2-9 is respectfully requested.

Claim 10 includes similar limitations as recited in claim 1 above. For applicable reasons as discussed above, claim 10 and corresponding dependent claims 11-17 are patentably distinct over the cited prior art.

Each of claims 18, 19, 20, 21, 22, and 23 includes similar limitations as recited in claim 1 above. For example, the claims recite directing the client computer depending on a location of the respective requesting client computer in a network. Thus, for applicable reasons as discussed above, claims 18, 19, 20, 21, 22, and 23 are patentably distinct over the cited prior art.

Dependent claims 4-9 further distinguish claim 1 over the cited prior art. Unfortunately, the Examiner provides no indication as to passages in any of the cited references that would anticipate the different aspect as of the invention. For example, the Examiner rejects claims 4 and 5 along with claim 1 but there is no indication of specific language in Wallis that would be used to reject the claims. Thus, the Applicants are not able to respond to this blank rejection.

Also, paragraph 15 of the Office Action indicates that "Claims 6-9 and 15-17 are not rejected on art." Presumably, these claims are allowable. Applicants respectfully request that the Examiner point out particular passages in cited prior art that would anticipate the claims or render the claims allowable over the cited prior art.

Rejections of Claims under 35 U.S.C. § 103(a)

The Examiner has rejected claim 3 under 35 U.S.C. § 103(a) based on the teachings of Wallis, et al., (U.S. Patent 6,282,569) in view of Brendel, et al., (U.S. Patent 5,774,660). Applicants respectfully submit that are appreciative of the Examiner's review of pending claim 3 and respectfully request further consideration of same in view of the following discussion pointing out why claim 3 is not obvious in view of the cited prior art.

Claim 3 includes limitations that the processor is configured to: "receive advertisements from the server replica, the advertisements containing information from which the replica router calculates the performance metric value; and maintain a database of the server replica advertisements" as well as "match the replica advertisements to their actual source IP address where each of the replica advertisements contain the actual source IP address of the server replica; and determine whether any of the server replicas are located behind firewalls."

Applicants respectfully submit that the cited passages do not teach or suggest the claimed invention. For example, the Examiner cites column 6, lines 34-41, which reads as follows:

> Each server can process requests from multiple clients, especially when multitasking operating systems such as UNIX and Windows NT are used. While a connection through the public Internet has been described, the connection could also be made through private networks such as corporate networks known as Intranets. Intranets are just a subset of the larger Internet. Thus the web site could be behind a corporate firewall and not be visible to the users of the Internet.

This passage merely recite that the proxy server described by Brendel can process multiple requests and be located behind a corporate firewall. A mere "presence" or "existence" of the server (in Brendel) behind a firewall does not

teach or suggest the claim limitation of "determining whether any of the server replicas are located behind firewalls." For example, the claimed invention recites a replica router includes a processor configured to determine whether any replica servers are located behind a firewall.

Also, note that Brendel is directed towards a proxy server while Wallis provides direct feedback to the requestor of a specific server to retrieve a document. Thus, the cited references are not combinable to teach the claimed invention.

For similar reasons, claim 12 is patentable over the cited prior art.

New Claims 24-34

Applicants further narrow the scope of the pending claims via new claims 24-33. Support for claims 24-26 can be found in the text at page 7 line 23 to page 10 line 5, figure 6, as well as elsewhere throughout the specification. Support for claims 27-32 can be found in the text at page 14 line 15 to page 17 line 21, figure 4, as well as elsewhere throughout the specification. Support for claim 33 can be found in these sections as well as elsewhere throughout the specification. Support for claim 34 –35 can be found in the text at page 7 line 4 to page 10 line 2, page 2 line 23 to page 3 line 25, as well as elsewhere throughout the specification. Support for claim 36 can be found in the text at page 15 line 17 to page 16 line 11, corresponding figure 4 , as well as elsewhere throughout the specification.

Applicants respectfully submit that none of the references disclose these recited techniques.

CONCLUSION

In view of the foregoing remarks, Applicants submit that the pending claims as well as newly added claims are in condition for allowance. A Notice to

this affect is respectfully requested. If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below.

Applicants hereby petition for any extension (in addition to a one–month extension) of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned Attorney at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,

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